PATENT COOPERATION TREATY

PCT

TRANSLATION INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference YCT-1013			FOR FURTHER AC	TION	e Form PCT/IPEA/416						
International application No.			International filing date	(dav/month/vear)	Priority date (day/month/year)						
PCT/JP2005/002417			17.02.2005		18.02.2004						
	International Patent Classification (IPC) or national classification and IPC C25B1/10 (2006.01), B09B3/00 (2006.01), C01B3/02(2006.01), C10K1/08(2006.01), C25B15/08 (2006.01)										
Applicant EBARA CORPORATION											
1.	1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.										
2.	This REPOR	Γ consists of a total of	6	sheets, including	this cover sheet.						
3.	This report is	also accompanied by A	NNEXES, comprising:								
	a. (s	ent to the applicant and	to the International Bure	eau) a total of 3	sheets, as follows:						
	a. (sent to the applicant and to the International Bureau) a total of 3 sheets, as follows: sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).										
	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental										
	Box.										
	b. (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s))										
	, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see										
		ion 802 of the Administ	•	indicated in the Supplet	mental Box relating to sequence Elisting (see						
4.	This report co	ntains indications relati	ng to the following items	:							
	Box N	Vo. I Basis of the	report								
	Box N	No. II Priority									
	Box N	No. III Non-establi	shment of opinion with re	egard to novelty, inventi	ive step and industrial applicability						
	Box N	No. IV Lack of uni	ty of invention								
	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement										
	Box N										
	Box N	No. VII Certain defe									
	Box No. VIII Certain observations on the international application										
Date of submission of the demand				ate of completion of thi	s report						
Name and mailing address of the IPEA/JP				Authorized officer							
Facsimil	e No.		Т	Telephone No.							

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2005/002417

Box	No. I	b. I Basis of the report	
1.		ith regard to the language, this report is based on the international applicated under this item.	ation in the language in which it was filed, unless otherwise
		This report is based on translations from the original language into the which is the language of a translation furnished for the purposes of: international search (Rule 12.3 and 23.1(b)) publication of the international application (Rule 12.4) international preliminary examination (Rule 55.2 and/or 55.3)	e following language,
2.	rece	Vith regard to the elements of the international application, this report is receiving Office in response to an invitation under Article 14 are referred is report): the international application as originally filed/furnished the description:	to in this report as "originally filed" and are not annexed to
			as originally filed/furnished
			d by this Authority on
	\boxtimes	the claims:	
		_ 1 15	as originally filed/furnished
			as amended (together with any statement) under Article 19
		nos.* 16–24 receive	
			d by this Authority on
	\bowtie	the drawings:	
		sheets fig. 1-24	as originally filed/furnished
		sheets* receive	d by this Authority on
		sheets* receive	d by this Authority on
		a sequence listing and/or any related table(s) – see Supplemental Box	Relating to Sequence Listing.
3.		The amendments have resulted in the cancellation of:	
		the description, pages	
		the claims, nos.	
		the drawings, sheets/figs	
		the sequence listing (specify):	
4.		This report has been established as if (some of) the amendments are they have been considered to go beyond the disclosure as filed, as in	nexed to this report and listed below had not been made, since
		the description, pages	
		the claims, nos.	
		the drawings, sheets/figs	
		the sequence listing (specify):	
		any table(s) related to sequence listing (specify):	
*	If ite	item 4 applies, some or all of those sheets may be marked "superseded."	

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2. Citations and explanations (Rule 70.7)

- Document 1: JP 2002-526655 A (The Regents of the University of California), 20 August 2002, paragraphs [0005] to [0031]
- Document 2: JP 04-041689 A (Mitsubishi Heavy Industries, Ltd.), 12 February 1992, page 2, upper right column, line 1 to page 3, upper right column, line 2; and fig. 1
- Document 3: JP 11-139803 A (Osaka Gas Co., Ltd.), 25 May 1999, paragraphs [0003] and [0011] to [0013]
- Document 4: JP 04-350188 A (Japan Atomic Energy Research Institute), 04 December 1992, entire text

The inventions set forth in claims 1, 13, 16 and 22 do not involve an inventive step in the light of document 1. The optimization of the temperature is merely a simple design matter.

The inventions set forth in claims 2, 3, 5, 6, 17, 18 and 19 do not involve an inventive step in the light of documents 1 and 2. It would have been easy for a person skilled in the art to conceive of modifying the high-temperature steam electrolysis method disclosed in document 1 so that the temperature is increased by means of a heat exchange technique, like in the invention

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

disclosed in document 2. Furthermore, the selection of the heat source to be used in such a configuration is merely a simple design matter.

The invention set forth in claim 7 does not involve an inventive step in the light of documents 1 and 2. The optimization of the electrolysis voltage is merely a simple design matter.

The invention set forth in claim 8 does not involve an inventive step in the light of documents 1 to 3. It would have been easy for a person skilled in the art to conceive of modifying the high-temperature steam electrolysis method disclosed in document 1 so that the sulfur content of the gas is decreased to a level of 1 ppb by volume or lower, like in the invention disclosed in document 3.

The inventions set forth in claims 9 to 12 and 21 do not involve an inventive step in the light of documents 1 to 3. The selection of a suitable reducing gas is merely a simple design matter.

The invention set forth in claim 14 does not involve an inventive step in the light of document 1. Devices for reacting gasses, wherein the operating conditions are optimized by means of a flow rate control valve, are well known.

Meanwhile, document 4 merely discloses a steam electrolysis method wherein carbon monoxide is employed in order to reduce the consumption of power.

On the other hand, the inventions set forth in claims 4, 15, 20, 23 and 24 are not disclosed in any of the documents that are cited in the international search report, and would not have been obvious to a person skilled in the art.

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International application No.
PCT/JP2005/002417

Box	No. VI	Certain documents cite	ed						
1.	Certain pul	blished documents (Rule 70	.10)						
		Application No. Patent No.		Publication date (day/month/year)	Filing d (day/month		Priority date (valid claim) (day/month/year)		
	JP	2004-060041	A	26.02.2004	25.07.	2002	25.07.2002		
		[E,X]							
2.	Non-writte	n disclosures (Rule 70.9)							
						Date of written disclosure			
		Kind of non-written disclo	sure	Date of non-written (day/month/ye			to non-written disclosure day/month/year)		
1									

International application No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY								PCT/JP2005/002417						
Box No. VIII	Certa	ain obse	rvations o	n the inte	rnational	applicati	on							
The following obs	servatio e made	ns on the	e clarity o	f the clain	ns, descrip	tion, and	drawings	or on t	he que	stion whet	her the c	laims are f	fully suppo	orted by
	Cla	im 7	7 inc	ludes	s the	word	ding	"ne	ces	sary	enei	rgy."		
Howeve	er,	the	defi	nitic	on of	the	phra	ase	in	quest	cion	is		
unclea	ar.													